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**D206-667-147TRN**  
**Job Sheet 202726**



**Part No:** D206-667-147TRN

**Job Qty:** 1 pcs

**Part Name:** Crosstube Assembly, Mid Fwd



**Part Weight:** 0 lbs

**Status:** New

**Priority:** Medium

**Job Created:** 11/1/19

**Job Tracking No:**

**Due Date:** 11/22/19

**Created By:** Marie Lajeunesse

**Type:** Stock

**Description:**

**Note:** D206-667-147 REV.B IPP rev:A 11.01.06 new issue DD verf:EC

**Ship Via:**

### Bill of Materials

### Job Routing

| Op<br>No | Operation            | Qty   | Start Date | Due<br>Date | Standard     |            | Workcenter/Supplier   |  | Lead Time | DAS<br>Sign-off |
|----------|----------------------|-------|------------|-------------|--------------|------------|-----------------------|--|-----------|-----------------|
|          |                      |       |            |             | Setup<br>Hrs | Run<br>Hrs | Workcenter / Supplier |  |           |                 |
| 100      | Mori Seiki TL-40 - 1 | 1 pcs | 11/22/19   | 11/22/19    | 1.00         | 1.47       | Mori Seiki TL-40 - 1  |  |           | 66 2019/11/20   |
| 110      | QC 2                 | 1 pcs | 11/22/19   | 11/22/19    | 0.00         | 0.00       | QC 2 - 1              |  |           | 9-89            |
|          |                      |       |            |             |              |            | QC 2 - 12             |  |           |                 |
|          |                      |       |            |             |              |            | QC 2 - 14             |  |           |                 |
|          |                      |       |            |             |              |            | QC 2 - 17             |  |           |                 |
|          |                      |       |            |             |              |            | QC 2 - 19             |  |           |                 |
|          |                      |       |            |             |              |            | QC 2 - 2              |  |           |                 |
|          |                      |       |            |             |              |            | QC 2 - 20             |  |           |                 |
|          |                      |       |            |             |              |            | QC 2 - 22             |  |           |                 |
|          |                      |       |            |             |              |            | QC 2 - 23             |  |           |                 |
|          |                      |       |            |             |              |            | QC 2 - 25             |  |           |                 |
|          |                      |       |            |             |              |            | QC 2 - 32             |  |           |                 |
|          |                      |       |            |             |              |            | QC 2 - 33             |  |           |                 |
|          |                      |       |            |             |              |            | QC 2 - 35             |  |           |                 |
|          |                      |       |            |             |              |            | QC 2 - 39             |  |           |                 |
|          |                      |       |            |             |              |            | QC 2 - 4              |  |           |                 |
|          |                      |       |            |             |              |            | QC 2 - 40             |  |           |                 |
|          |                      |       |            |             |              |            | QC 2 - 44             |  |           |                 |
|          |                      |       |            |             |              |            | QC 2 - 45             |  |           |                 |
|          |                      |       |            |             |              |            | QC 2 - 48             |  |           |                 |
|          |                      |       |            |             |              |            | QC 2 - 49             |  |           |                 |
|          |                      |       |            |             |              |            | QC 2 - 50             |  |           |                 |
|          |                      |       |            |             |              |            | QC 2 - 51             |  |           |                 |
|          |                      |       |            |             |              |            | QC 2 - 52             |  |           |                 |
|          |                      |       |            |             |              |            | QC 2 - 57             |  |           |                 |
|          |                      |       |            |             |              |            | QC 2 - 62             |  |           |                 |
|          |                      |       |            |             |              |            | QC 2 - 63             |  |           |                 |
|          |                      |       |            |             |              |            | QC 2 - 8              |  |           |                 |
|          |                      |       |            |             |              |            | QC 2 - 66             |  |           | 66 2019/11/20   |
|          |                      |       |            |             |              |            | QC 2 - 64             |  |           | 9-89            |
|          |                      |       |            |             |              |            | QC 2 - 65             |  |           |                 |

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|     |                            |       |          |           |                            |                              |
|-----|----------------------------|-------|----------|-----------|----------------------------|------------------------------|
|     |                            |       |          |           | QC 2 - 5                   |                              |
|     |                            |       |          |           | QC 2 - 71                  |                              |
|     |                            |       |          |           | QC 2 - 73                  |                              |
|     |                            |       |          |           | QC 2 - 69                  |                              |
| 120 | Mori Seiki TL-40 - 1 - B4B | 1 pcs | 11/22/19 | 1.00 1.47 | Mori Seiki TL-40 - 1 - B4B | DAS<br>66 2019/11/22<br>9-89 |
| 130 | QC 2                       | 1 pcs | 11/22/19 | 0.00 0.00 | QC 2 - 1                   |                              |
|     |                            |       |          |           | QC 2 - 12                  |                              |
|     |                            |       |          |           | QC 2 - 14                  |                              |
|     |                            |       |          |           | QC 2 - 17                  |                              |
|     |                            |       |          |           | QC 2 - 19                  |                              |
|     |                            |       |          |           | QC 2 - 2                   |                              |
|     |                            |       |          |           | QC 2 - 20                  |                              |
|     |                            |       |          |           | QC 2 - 22                  |                              |
|     |                            |       |          |           | QC 2 - 23                  |                              |
|     |                            |       |          |           | QC 2 - 25                  |                              |
|     |                            |       |          |           | QC 2 - 32                  |                              |
|     |                            |       |          |           | QC 2 - 33                  |                              |
|     |                            |       |          |           | QC 2 - 35                  |                              |
|     |                            |       |          |           | QC 2 - 39                  |                              |
|     |                            |       |          |           | QC 2 - 4                   |                              |
|     |                            |       |          |           | QC 2 - 40                  |                              |
|     |                            |       |          |           | QC 2 - 44                  |                              |
|     |                            |       |          |           | QC 2 - 45                  |                              |
|     |                            |       |          |           | QC 2 - 48                  |                              |
|     |                            |       |          |           | QC 2 - 49                  |                              |
|     |                            |       |          |           | QC 2 - 50                  |                              |
|     |                            |       |          |           | QC 2 - 51                  |                              |
|     |                            |       |          |           | QC 2 - 52                  |                              |
|     |                            |       |          |           | QC 2 - 57                  |                              |
|     |                            |       |          |           | QC 2 - 62                  |                              |
|     |                            |       |          |           | QC 2 - 63                  |                              |
|     |                            |       |          |           | QC 2 - 8                   |                              |
|     |                            |       |          |           | QC 2 - 66                  | DAS<br>66 2019/11/22<br>9-89 |
|     |                            |       |          |           | QC 2 - 64                  |                              |
|     |                            |       |          |           | QC 2 - 65                  |                              |
|     |                            |       |          |           | QC 2 - 5                   |                              |
|     |                            |       |          |           | QC 2 - 71                  |                              |
|     |                            |       |          |           | QC 2 - 73                  |                              |
|     |                            |       |          |           | QC 2 - 69                  |                              |
| 140 | QC 8                       | 1 pcs | 11/22/19 | 0.00 0.00 | QC 8 - 12                  |                              |
|     |                            |       |          |           | QC 8 - 14                  |                              |
|     |                            |       |          |           | QC 8 - 17                  |                              |
|     |                            |       |          |           | QC 8 - 20                  |                              |
|     |                            |       |          |           | QC 8 - 25                  |                              |
|     |                            |       |          |           | QC 8 - 3                   |                              |
|     |                            |       |          |           | QC 8 - 32                  |                              |
|     |                            |       |          |           | QC 8 - 33                  |                              |
|     |                            |       |          |           | QC 8 - 35                  |                              |
|     |                            |       |          |           | QC 8 - 39                  |                              |
|     |                            |       |          |           | QC 8 - 4                   |                              |
|     |                            |       |          |           | QC 8 - 44                  |                              |
|     |                            |       |          |           | QC 8 - 45                  |                              |
|     |                            |       |          |           | QC 8 - 49                  |                              |
|     |                            |       |          |           | QC 8 - 58                  |                              |
|     |                            |       |          |           | QC 8 - 8                   |                              |
|     |                            |       |          |           | QC 8 - 9                   |                              |
|     |                            |       |          |           | QC 8 - 68                  |                              |
|     |                            |       |          |           | QC 8 - 67                  |                              |
|     |                            |       |          |           | QC 8 - 1 (A)               |                              |



|                                 |       |          |           |  |                        |               |
|---------------------------------|-------|----------|-----------|--|------------------------|---------------|
|                                 |       |          |           |  | QC 8 - 47              |               |
|                                 |       |          |           |  | QC 8 - 40              |               |
|                                 |       |          |           |  | QC 8 - 52              |               |
|                                 |       |          |           |  | QC 8 - 23              |               |
|                                 |       |          |           |  | QC 8 - 57              | DAS           |
|                                 |       |          |           |  | QC 8 - 76              | 76            |
|                                 |       |          |           |  | QC 8 - 61              | 9-89          |
| 145 Crosstubes - 2 - B4B        | 1 pcs | 11/22/19 | 0.00 0.25 |  | Crosstubes - 1 - B4B   |               |
|                                 |       |          |           |  | Crosstubes - 2 - B4B   | DB 11/29/2019 |
|                                 |       |          |           |  | Crosstubes - 3 - B4B   |               |
|                                 |       |          |           |  | Crosstubes - 4 - B4B   |               |
| 150 Crosstubes - 3 - B4B        | 1 pcs | 11/22/19 | 0.00 0.13 |  | Crosstubes - 1 - B4B   |               |
|                                 |       |          |           |  | Crosstubes - 2 - B4B   |               |
|                                 |       |          |           |  | Crosstubes - 3 - B4B   | NOV 29 2019   |
|                                 |       |          |           |  | Crosstubes - 4 - B4B   |               |
| 160 QC 7                        | 1 pcs | 11/22/19 | 0.00 0.00 |  | QC 7 - 10              |               |
|                                 |       |          |           |  | QC 7 - 13              |               |
|                                 |       |          |           |  | QC 7 - 14              |               |
|                                 |       |          |           |  | QC 7 - 15              |               |
|                                 |       |          |           |  | QC 7 - 17              |               |
|                                 |       |          |           |  | QC 7 - 18              |               |
|                                 |       |          |           |  | QC 7 - 19              |               |
|                                 |       |          |           |  | QC 7 - 2               |               |
|                                 |       |          |           |  | QC 7 - 28              |               |
|                                 |       |          |           |  | QC 7 - 3               |               |
|                                 |       |          |           |  | QC 7 - 30              |               |
|                                 |       |          |           |  | QC 7 - 34              |               |
|                                 |       |          |           |  | QC 7 - 36              |               |
|                                 |       |          |           |  | QC 7 - 37              |               |
|                                 |       |          |           |  | QC 7 - 41              |               |
|                                 |       |          |           |  | QC 7 - 47              |               |
|                                 |       |          |           |  | QC 7 - 48              |               |
|                                 |       |          |           |  | QC 7 - 51              |               |
|                                 |       |          |           |  | QC 7 - 58              |               |
|                                 |       |          |           |  | QC 7 - 59              |               |
|                                 |       |          |           |  | QC 7 - 60              |               |
|                                 |       |          |           |  | QC 7 - 9               |               |
|                                 |       |          |           |  | QC 7 - 68              |               |
|                                 |       |          |           |  | QC 7 - 50              |               |
|                                 |       |          |           |  | QC 7 - 67              |               |
|                                 |       |          |           |  | QC 7 - 40              |               |
|                                 |       |          |           |  | QC 7 - 24              |               |
|                                 |       |          |           |  | QC 7 - 43              |               |
|                                 |       |          |           |  | QC 7 - 61              | DAS           |
|                                 |       |          |           |  | QC 7 - 81              | 76            |
|                                 |       |          |           |  | QC 7 - 76              | 9-89          |
|                                 |       |          |           |  | QC 7 - 79              |               |
| 170 Packaging 3-1 - Stock - B4B | 1 pcs | 11/22/19 | 0.00 0.00 |  | Packaging 3 - 1 - B4B  |               |
|                                 |       |          |           |  | Packaging 3 - 2 - B4B  |               |
|                                 |       |          |           |  | Packaging 3 - 3 - B4B  |               |
|                                 |       |          |           |  | Packaging 3 - 4 - B4B  |               |
|                                 |       |          |           |  | Packaging 3 - 5 - B4B  |               |
|                                 |       |          |           |  | Packaging 3 - 6 - B4B  |               |
|                                 |       |          |           |  | Packaging 3 - 7 - B4B  |               |
|                                 |       |          |           |  | Packaging 3 - 8 - B4B  |               |
|                                 |       |          |           |  | Packaging 3 - 9 - B4B  |               |
|                                 |       |          |           |  | Packaging 3 - 10 - B4B |               |
|                                 |       |          |           |  | Packaging 3 - 11 - B4B |               |
|                                 |       |          |           |  | Packaging 3 - 12 - B4B |               |

|                |       |          |           |                        |                               |
|----------------|-------|----------|-----------|------------------------|-------------------------------|
|                |       |          |           | Packaging 3 - 13 - B4B |                               |
|                |       |          |           | Packaging 3 - 14 - B4B |                               |
|                |       |          |           | Packaging 3 - 15 - B4B |                               |
|                |       |          |           | Packaging 3 - 16 - B4B |                               |
|                |       |          |           | Packaging 3 - 17 - B4B |                               |
|                |       |          |           | Packaging 3 - 18 - B4B |                               |
|                |       |          |           | Packaging 3 - 19 - B4B |                               |
|                |       |          |           | Packaging 3 - 20 - B4B |                               |
|                |       |          |           | Packaging 3 - 21 - B4B |                               |
|                |       |          |           | Packaging 3 - 22 - B4B |                               |
|                |       |          |           | Packaging 3 - 23 - B4B |                               |
|                |       |          |           | Packaging 3 - 24 - B4B | BB 12/3/2019                  |
|                |       |          |           | Packaging 3 - 25 - B4B |                               |
|                |       |          |           | Packaging 3 - 26 - B4B |                               |
|                |       |          |           | Packaging 3 - 27 - B4B |                               |
|                |       |          |           | Packaging 3 - 28 - B4B |                               |
|                |       |          |           | Packaging 3 - 29 - B4B |                               |
|                |       |          |           | Packaging 3 - 30 - B4B |                               |
|                |       |          |           | Packaging 3 - 31 - B4B |                               |
|                |       |          |           | Packaging 3 - 32 - B4B |                               |
|                |       |          |           | Packaging 3 - 33 - B4B |                               |
|                |       |          |           | Packaging 3 - 34 - B4B |                               |
|                |       |          |           | Packaging 3 - 35 - B4B |                               |
|                |       |          |           | Packaging 3 - 36 - B4B |                               |
| 180 QC 21 - SA | 1 pcs | 11/22/19 | 0.00 0.00 | QC 21 - SA - 21        | DAS<br>21<br>3-11 DEC 03 2019 |
|                |       |          |           | QC 21 - SA - 70        |                               |
|                |       |          |           | QC 21 - SA - 53        |                               |

Part Op 100 - Mori Seiki TL-40 (Mori Seiki CNC Lathe Large) 1-Fill tube with sand & install plugs 206-147 on both ends as per Descriptions: Folio FB029 2-Turn first side as per Folio FB029 3-Blend transition lines only with belt sander 60 grit.

110 - (QC2- Inspect parts off machine FAI/FAIB)

120 - Mori Seiki TL-40 (Mori Seiki CNC Lathe Large) 1-Turn second side as per Folio FB029 2-Blend transition lines only with belt sander 60 grit.

130 - (QC2- Inspect parts off machine FAI/FAIB)

140 - r)) Production .0000 \* Attachments 140 QC QC8 (QC8- Inspect parts - second check)

145 - (Crosstubes) GRIND ONLY TRANSITION LINES SMOOTH LONGITUDE WAY.

150 - (Crosstubes) 1- handfinish X-TUBE INSIDE AND OUT

160 - (QC7-Inspect Chemical Conversion Coat)

170 - (Identify as per dwg & Stock Location: LOCATION : LG014

180 - (QC21- Final Inspection - Work Order Release)

### Job BOM

| Part / Item | Component Name     | Quantity     | Operation                | Container |
|-------------|--------------------|--------------|--------------------------|-----------|
| D6002-115   | Crosstube Material | 1 pcs (1 ea) | 100-Mori Seiki TL-40 - 1 | F123961   |

### Job Allocations

| Operation                | Component Part | Required | Inventory | Allocated |
|--------------------------|----------------|----------|-----------|-----------|
| 100-Mori Seiki TL-40 - 1 | D6002-115      | 1        | 60        | 0         |

### Part Specifications

Specifications could not be found.

**DART**  
AEROSPACE

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Container No: S233376



Part: D206-667-147TRN

Job No: 202726

Serial No/Batch: S233376

Revision: B

Inspector:

Exp Date:

Instructions:

Date: 11/20/19



1

|                                                 |                                  |
|-------------------------------------------------|----------------------------------|
| <b>DART AEROSPACE LTD</b>                       | <b>Work Order:</b> 202726        |
| <b>Description:</b> Crosstube Assembly, Mid Fwd | <b>Part Number:</b> D206-667-147 |
| <b>Inspection Dwg:</b> D206-667-147 Rev: B      | <b>Page 1 of 2</b>               |

### FIRST ARTICLE INSPECTION CHECKLIST

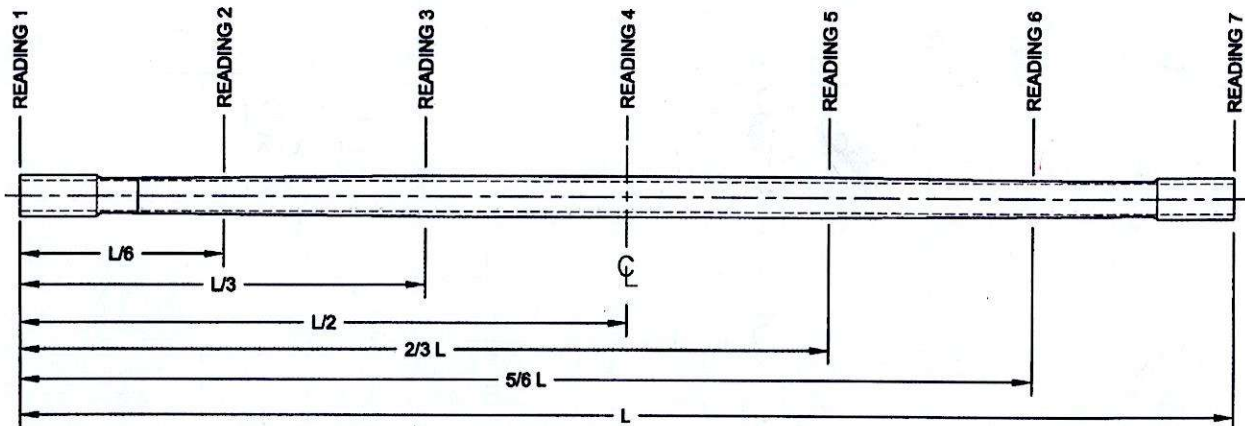
|        | Inspection Sheet<br>Drawing Dimension | Tolerance     | Actual<br>Dimension | Accept | Reject | Method of<br>Inspection | Comments |
|--------|---------------------------------------|---------------|---------------------|--------|--------|-------------------------|----------|
| SIDE A | 2.240                                 | +0.005/-0.000 | 2.242               | ✓      |        | Cnc 04                  |          |
|        | 1.984                                 | +0.005/-0.000 | 1.989               | ✓      |        | Cnc 08                  |          |
|        | 2.019                                 | +0.005/-0.000 | 2.022               | ✓      |        | Cnc 04                  |          |
|        | 2.058                                 | +0.005/-0.000 | 2.063               | ✓      |        | ↓                       |          |
|        | 2.097                                 | +0.005/-0.000 | 2.102               | ✓      |        |                         |          |
|        | 2.136                                 | +0.005/-0.000 | 2.140               | ✓      |        |                         |          |
|        | 2.176                                 | +0.005/-0.000 | 2.179               | ✓      |        |                         |          |
|        |                                       |               |                     |        |        |                         |          |
|        | 0.125                                 | +/-0.010      | .135                | ✓      |        | Cnc 08                  |          |
|        | R0.063                                | +/-0.010      | .063                | ✓      |        | Rg                      |          |
|        | R2.00                                 | +/-0.010      | 2.00                | ✓      |        | Rg                      |          |
|        | R0.063                                | +/-0.010      | .063                | ✓      |        | Rg                      |          |
|        | 4.438                                 | +/-0.030      | 4.432               | ✓      |        | Cnc 08                  |          |
|        |                                       |               |                     |        |        |                         |          |
| SIDE B | 2.240                                 | +0.005/-0.000 | 2.242               | ✓      |        | Cnc-04                  |          |
|        | 1.984                                 | +0.005/-0.000 | 1.989               | ✓      |        | Cnc-08                  |          |
|        | 2.019                                 | +0.005/-0.000 | 2.023               | ✓      |        | Cnc-04                  |          |
|        | 2.058                                 | +0.005/-0.000 | 2.063               | ✓      |        | ↓                       |          |
|        | 2.097                                 | +0.005/-0.000 | 2.102               | ✓      |        |                         |          |
|        | 2.136                                 | +0.005/-0.000 | 2.141               | ✓      |        | ↓                       |          |
|        | 2.176                                 | +0.005/-0.000 | 2.179               | ✓      |        |                         |          |
|        |                                       |               |                     |        |        |                         |          |
|        | 0.125                                 | +/-0.010      | .130                | ✓      |        | Cnc-08                  |          |
|        | R0.063                                | +/-0.010      | .063                | ✓      |        | Rg                      |          |
|        | R2.00                                 | +/-0.010      | 2.000               | ✓      |        | ↓                       |          |
|        | R0.063                                | +/-0.010      | .063                | ✓      |        |                         |          |
|        | 4.438                                 | +/-0.030      | 4.443               | ✓      |        | Cnc-08                  |          |
|        |                                       |               |                     |        |        |                         |          |
|        | 99.84                                 | +/-0.020      | 99.85               | ✓      |        | Tape                    |          |



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|                                                 |                                  |
|-------------------------------------------------|----------------------------------|
| <b>DART AEROSPACE LTD</b>                       | <b>Work Order:</b> 202726        |
| <b>Description:</b> Crosstube Assembly, Mid Fwd | <b>Part Number:</b> D206-667-147 |
| <b>Inspection Dwg:</b> D206-667-147 Rev: B      | <b>Page 2 of 2</b>               |

### WALL THICKNESS MEASUREMENT



| Location              | WALL THICKNESS MEASUREMENT (IN) |      |      |      | Deviation<br>$\Delta w$<br>(max-min) | TOLERANCE |
|-----------------------|---------------------------------|------|------|------|--------------------------------------|-----------|
|                       | w1                              | w2   | w3   | w4   |                                      |           |
| READING 1<br>L= 0"    | .250                            | .273 | .274 | .253 | .024                                 | 0.035"    |
| READING 2<br>L= 16.64 | .175                            | .179 | .182 | .172 | .010                                 |           |
| READING 3<br>L= 33.28 | .254                            | .263 | .266 | .252 | .014                                 |           |
| READING 4<br>L= 49.92 | .261                            | .272 | .274 | .256 | .018                                 |           |
| READING 5<br>L= 66.56 | .254                            | .262 | .274 | .259 | .020                                 |           |
| READING 6<br>L= 83.2  | .172                            | .177 | .186 | .176 | .014                                 |           |
| READING 7<br>L= 99.84 | .253                            | .264 | .272 | .255 | .019                                 |           |

#### Calibration Result

Actual Block Thickness: 100-300

Sitiescan 250 Measured Thickness: 100-300

|                                    |                                   |                              |
|------------------------------------|-----------------------------------|------------------------------|
| <b>Measured by:</b> DAS 66<br>9-89 | <b>Audited by:</b> DAS 76<br>9-89 | <b>Preliminary Approval:</b> |
| <b>Date:</b> 2019/11/22            | <b>Date:</b> 11/29/2019           | <b>Date:</b>                 |

| Rev | Date     | Change                    | Revised by | Approved |
|-----|----------|---------------------------|------------|----------|
| B   | 11.06.21 | New Issue                 | KJ         |          |
| C   | 12.06.04 | Wall thickness form added | KJ         |          |
| D   | 19.05.01 | Drawing Revision Change   | MG         | M.       |



| Item | Qty<br>-147 | Part Number   | Description                       |
|------|-------------|---------------|-----------------------------------|
| 1    | X           | D206-667-147  | CROSSTUBE ASSEMBLY (206L MID FWD) |
| 2    | 1           | D6002-115     | CROSSTUBE                         |
| 3    | 2           | D2873-043     | NUT PLATE                         |
| 4    | 2           | D2873-045     | NUT PLATE                         |
| 5    | 2           | D2891-1       | SUPPORT                           |
| 6    | 4           | D3595-063-395 | RUBBER CUSHION                    |
| 7    | 4           | MS21920-20    | CLAMP (OR MS21920-21)             |
| 8    | 14          | MS20601AD4W8  | RIVET (OR NAS9302B-4-8)           |
| 9    | A/R         | PROSEAL       | SEALANT, AMS-S-8802 CLASS B-2     |
| 10   | 2           | AN742D36      | CLAMP                             |
| 11   | 2           | MS9165-05     | ANGLE BRACKET                     |
| 12   | 2           | MS21042L3     | NUT (OR MS21042-3)                |
| 13   | 2           | MS27039-1-08  | SCREW                             |
| 14   | 4           | NAS1149C0332R | WASHER (OR AN960C10L)             |

#### GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6002-115  
FINISHED LENGTH = 99.84±0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2  
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D206-667-147" AND BATCH NUMBER ON INSIDE OF CUFF PER DART QSI 044 6.4 (VIBRATING STYLUS).
- 7) WEIGHT: 15.0 lbs (-507 = 12.84)
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY. TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 10 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) TO INSTALL D2891-1 SUPPORT: ABRASE MATING SURFACE OF SUPPORT AND CROSSTUBE WITH 180-GRIT SANDPAPER AND REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY A 0.04" TO 0.07" THICK LAYER OF PROSEAL 890 CLASS B-2 (OR AMS-S-8802 CLASS B-2) SEALANT TO MATING SURFACE OF SUPPORT.
- 13) INSTALL MS21920-20 CLAMPS (OR -21) WITH D3595-063-395 RUBBER CUSHIONS TO SECURE THE D2891-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS ARE LOCATED ON CROSSTUBE SUPPORTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.
- 16) MASK AREA UNDER CLAMP PRIOR TO PAINTING.
- 17) SEAL EDGES WHERE AN742D36 CLAMP MEETS WITH THE CROSSTUBE USING SIKAFLEX-241/-291 OR MIL-S-8802 CLASS B2 OR PROSEAL 890 SEALANT.
- 18) PERFORM RESISTANCE CHECK TO ENSURE MAX RESISTANCE IS 10 MEGOHMS.

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EN 14-717 4

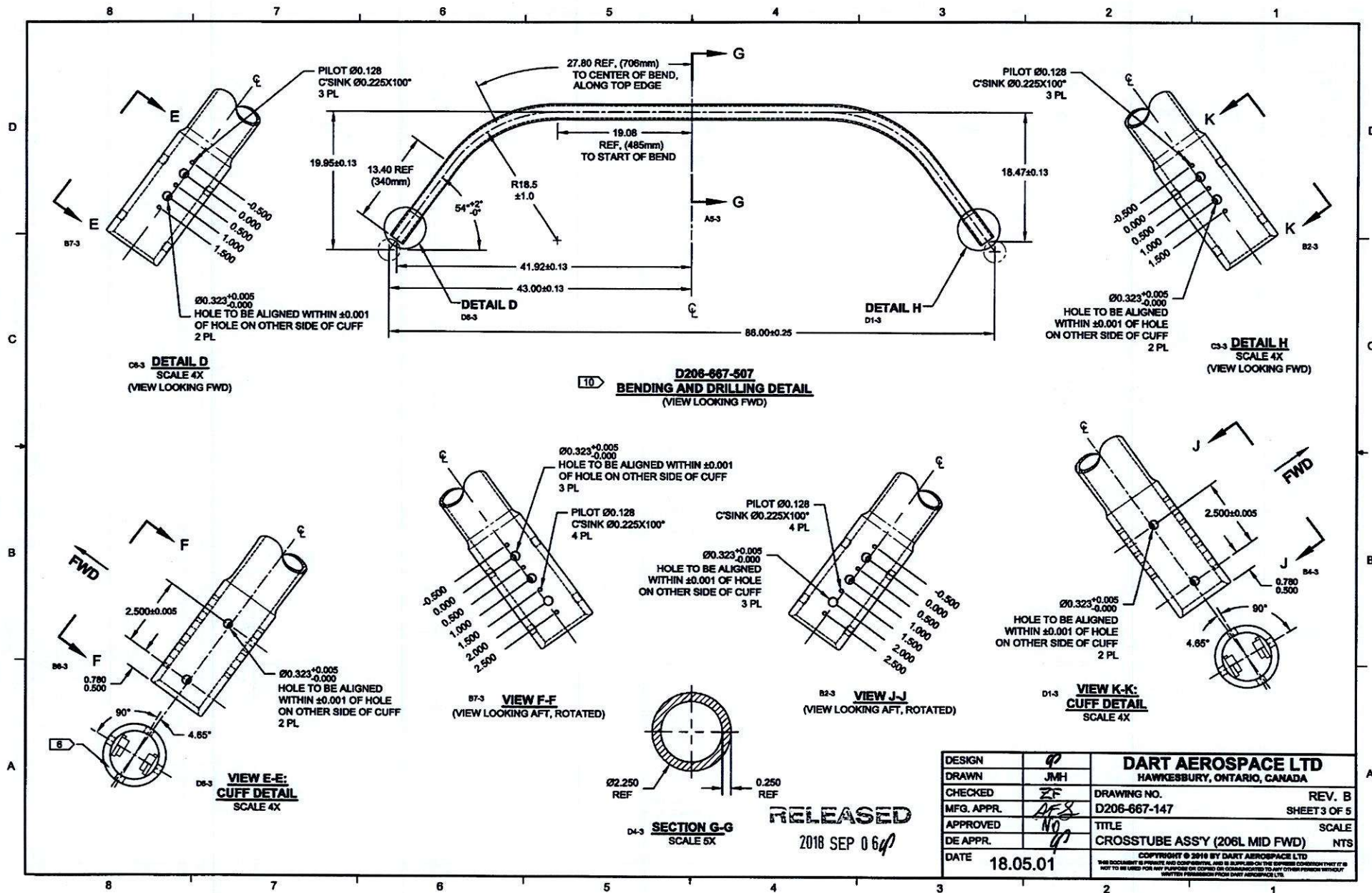
|            |                                                                                                                                                                                                                               |     |          |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----------|
| B          | REVISE SHEET 2 ASSEMBLY DETAIL HOLE PATTERN PER CAR18-221. UPDATE PARTS LIST AND GENERAL NOTES 12 & 15 TO INCORPORATE DEO A-1. ADD ITEMS 10-14 TO PARTS LIST, ADD GENERAL NOTES 16-18 AND ADD SHEET 5 TO INCORPORATE DEO A-2. | JMH | 18.05.01 |
| A          | NEW ISSUE                                                                                                                                                                                                                     | CP  | 10.11.23 |
| REV.       | DESCRIPTION                                                                                                                                                                                                                   | BY  | DATE     |
| DESIGN     |                                                                                                                                                                                                                               |     |          |
| DRAWN      | JMH                                                                                                                                                                                                                           |     |          |
| CHECKED    | ZE                                                                                                                                                                                                                            |     |          |
| MFG. APPR. | AS                                                                                                                                                                                                                            |     |          |
| APPROVED   | NO                                                                                                                                                                                                                            |     |          |
| DE APPR.   |                                                                                                                                                                                                                               |     |          |
| DATE       | 18.05.01                                                                                                                                                                                                                      |     |          |

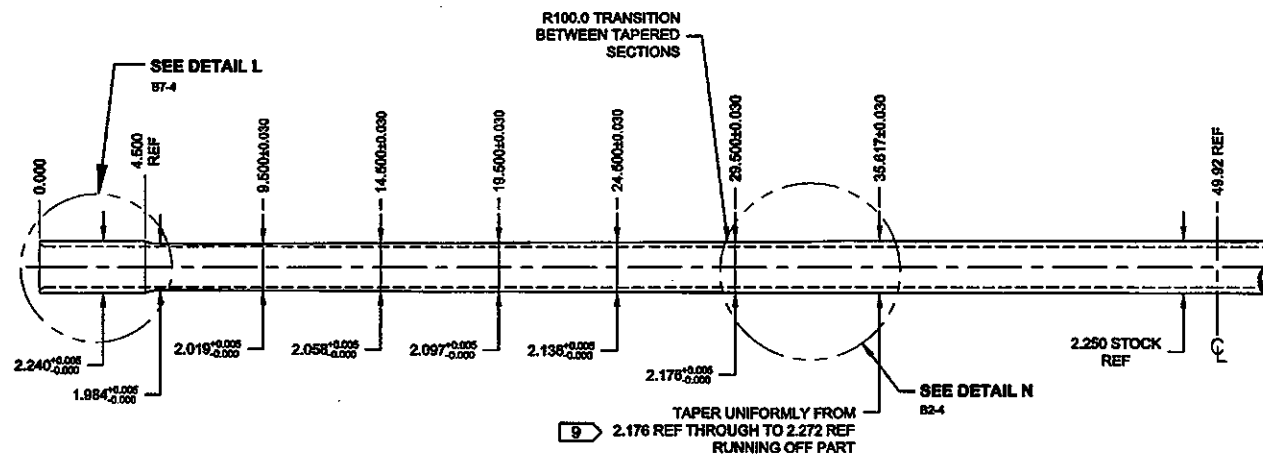
  

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|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| <b>DART AEROSPACE LTD</b><br>HAWKESBURY, ONTARIO, CANADA                                                                                                                                                                                                                                                                                                                                                                            |                        |
| DRAWING NO.<br>D206-667-147                                                                                                                                                                                                                                                                                                                                                                                                         | REV. B<br>SHEET 1 OF 5 |
| TITLE<br>CROSSTUBE ASS'Y (206L MID FWD)                                                                                                                                                                                                                                                                                                                                                                                             | SCALE<br>NTS           |
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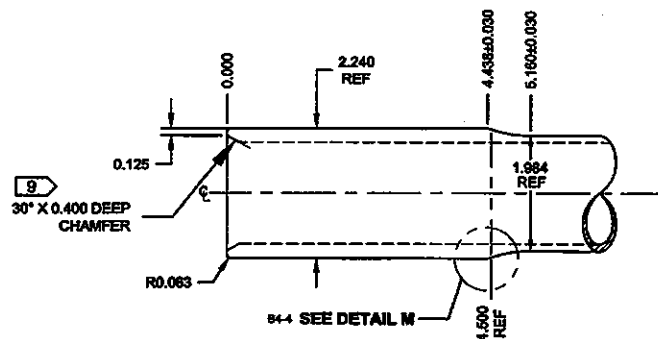




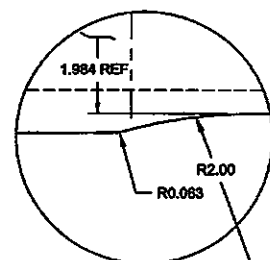




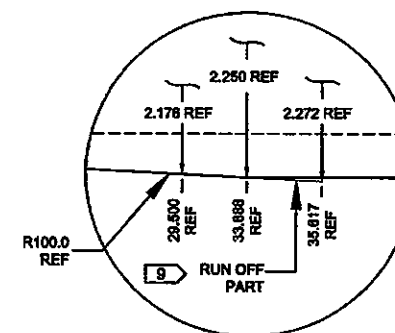
# TURNING DETAIL



**DETAIL L:**  
CROSSTUBE CUFF  
NOT TO SCALE



**DETAIL M:**  
CUFF TRANSITION  
NOT TO SCALE



**DETAIL N:**  
TAPER RUN-OFF  
NOT TO SCALE

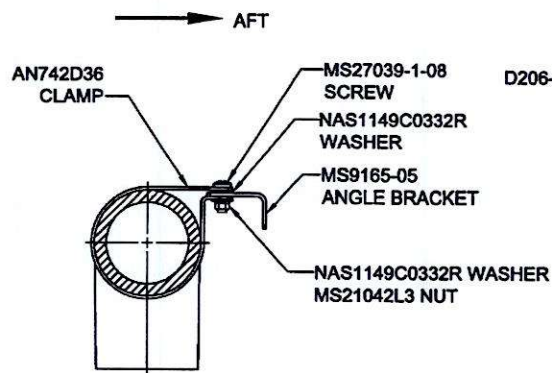
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|------------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| DESIGN     | 90       | <b>DART AEROSPACE LTD</b>                                                                                                                                                                                                                                              |              |
| DRAWN      | JMH      | HAWKESBURY, ONTARIO, CANADA                                                                                                                                                                                                                                            |              |
| CHECKED    | EF       | DRAWING NO.                                                                                                                                                                                                                                                            | REV. B       |
| MFG. APPR. | EF       | D206-687-147                                                                                                                                                                                                                                                           | SHEET 4 OF 5 |
| APPROVED   | NO       | TITLE                                                                                                                                                                                                                                                                  | SCALE        |
| DE APPR.   | 97       | CROSSTUBE ASS'Y (206L MID FWD)                                                                                                                                                                                                                                         | NTS          |
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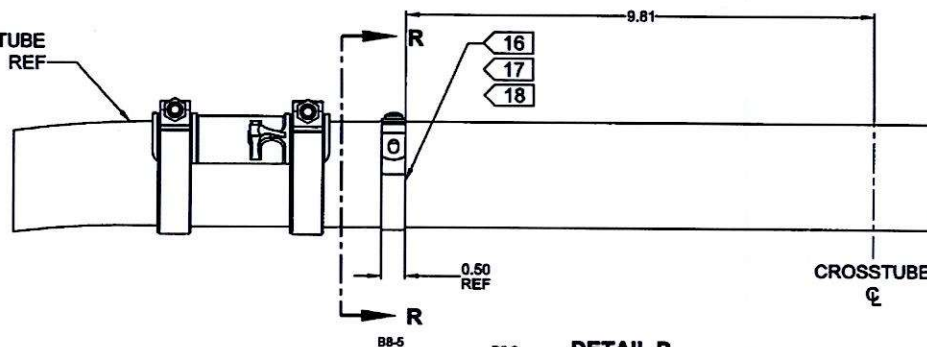
8 7 6 5 4 3 2 1



C4-5 **SECTION R-R**



D206-667-507 CROSSTUBE REF



D5-2 **DETAIL P**  
BONDING STRAP INSTALLATION 2 PL



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|            |          |                                                                                                                                                                                                                                                                                                |              |
|------------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| DESIGN     | 40       | <b>DART AEROSPACE LTD</b><br>HAWKESBURY, ONTARIO, CANADA                                                                                                                                                                                                                                       |              |
| DRAWN      | JMH      |                                                                                                                                                                                                                                                                                                |              |
| CHECKED    | ZE       | DRAWING NO.                                                                                                                                                                                                                                                                                    | REV. B       |
| MFG. APPR. | DEB      | D206-667-147                                                                                                                                                                                                                                                                                   | SHEET 5 OF 5 |
| APPROVED   | NO       | TITLE                                                                                                                                                                                                                                                                                          | SCALE        |
| DE APPR.   | 47       | CROSSTUBE ASS'Y (206L MID FWD)                                                                                                                                                                                                                                                                 | NTS          |
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8 7 6 5 4 3 2 1

Entered: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. \_\_\_\_\_

Route update only ☐

|                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                        |              |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|--------------|--|
| Job: _____<br><br>Part No. _____                                                                                                                                                                                                                                                                                                                                                         | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/> | <b>DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/> </div> <div>           Eng. (Non-AW) <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Water Jet <input type="checkbox"/><br/>           Supplier <input type="checkbox"/><br/>           Quality <input type="checkbox"/> </div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                        |              |  |
| Date :                                                                                                                                                                                                                                                                                                                                                                                   | Sequence #:                                                                                                                       | QTY Affected :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                        | MRB (QSI042) |  |
| Description Work Order Deviation                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Disposition            |              |  |
|                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Completed By           |              |  |
|                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Lead hand / Supervisor |              |  |
|                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | QC / QA Coordinator    |              |  |
| <b>Root Cause</b><br><br>Operator <input type="checkbox"/><br>Manufacturing Process <input type="checkbox"/><br>Equip/Tooling <input type="checkbox"/><br>Handling/Presservation <input type="checkbox"/><br>Material <input type="checkbox"/><br>Product Improvement <input type="checkbox"/><br>Process Improvement <input type="checkbox"/><br>Human Factors <input type="checkbox"/> |                                                                                                                                   | <b>FAULT CATEGORY</b><br><br><div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> Pressure/Forced<br/> <input type="checkbox"/> Bending<br/> <input type="checkbox"/> Crushing<br/> <input type="checkbox"/> Cracks<br/> <input type="checkbox"/> Crimp/Kink/Ripple/Wave/Twist<br/> <input type="checkbox"/> Marks/Chatter<br/> <input type="checkbox"/> Mislabeled         </div> <div> <input type="checkbox"/> Contamination<br/> <input type="checkbox"/> Misaligned/off center<br/> <input type="checkbox"/> BOM/Route<br/> <input type="checkbox"/> Broken/Damage/Defect<br/> <input type="checkbox"/> Incomplete/Unclear Instructions<br/> <input type="checkbox"/> Drill Holes<br/> <input type="checkbox"/> Fit/Function         </div> <div> <input type="checkbox"/> Power Loss/Surge<br/> <input type="checkbox"/> Folio/Program<br/> <input type="checkbox"/> Grain Direction<br/> <input type="checkbox"/> Weld<br/> <input type="checkbox"/> Wrong Stock Pulled<br/> <input type="checkbox"/> Out of Sequence<br/> <input type="checkbox"/> Off-set/Set-up         </div> <div> <input type="checkbox"/> Positioned Wrong<br/> <input type="checkbox"/> Outside Tolerance<br/> <input type="checkbox"/> Drawing<br/> <input type="checkbox"/> Finish<br/> <input type="checkbox"/> Part Lost/Missing<br/> <input type="checkbox"/> Misread         </div> </div> |                        |              |  |
| Other/Details:                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                        |              |  |